

What is claimed is:

1. A gas barrier film having a silicon oxide film formed by the plasma CVD method on the one side or both sides of a base material, wherein said silicon oxide film is composed of the rate of components that the number of oxygen atoms is from 170 to 200 and the number of carbon atoms is 30 or less to the number of silicon atoms of 100, and further has a peak position of IR absorption band based on the stretching vibration of Si-O-Si that exist between 1055 and 1065 cm^{-1} .

2. The gas barrier film according to claim 1, wherein said silicon oxide film has a refractive index of 1.45 to 1.48.

3. A gas barrier film comprising a base material and a vapor deposition film formed on both sides or one side of the base material, wherein a distance between grains formed on the surface of said vapor deposition film is from 5 to 40 nm.

4. The gas barrier film according to claim 3, wherein said vapor deposition film is a silicon oxide film.

5. A gas barrier film comprising a base material and a silicon oxide film formed on both sides or one side of the base material, wherein said silicon oxide film has an E' center that is observed by measurement with the electron spin resonance method (ESR method).

6. The gas barrier film according to claim 5, wherein the density of said E' center is 5×10^{15} spins/cm³ or more.

7. A gas barrier film comprising a base material and a silicon oxide film formed on both sides or one side of the

base material, wherein said silicon oxide film has an infrared absorption peak based on the stretching vibration of CO molecules that exists between $2341 \pm 4 \text{ cm}^{-1}$.

8. The gas barrier film according to claim 1, wherein oxygen transmission rate is $0.5 \text{ cc/m}^2/\text{day}$ or less and water vapor transmission rate is $0.5 \text{ g/m}^2/\text{day}$ or less.

9. The gas barrier film according to claim 1, wherein said silicon oxide film is from 5 to 300 nm in thickness.

10. A production method of a gas barrier film in which at least an organic silicon compound gas and a gas containing oxygen atoms are used as raw material gases and a silicon oxide film is formed on a base material by the plasma CVD method within a reaction chamber, wherein a component in said organic silicon compound gas is a compound that has no carbon-silicon bond in its molecule, the temperature of the base material is within the range of -20°C to 100°C at the start time of film forming, the silicon oxide film is formed at the flow ratio of said gas containing oxygen atoms to organic silicon compound gas ranging from 3 to 50 when the organic silicon compound gas is 1, and then the film is heat treated within the range of 50°C to 200°C .

11. A laminated material, wherein a heat sealable resin layer is provided on the surface of at least one side of the gas barrier film according to claim 1.

12. A packaging container, wherein a laminated material according to claim 11 is used and said heat sealable resin is heat-sealed to make a bag or case.

13. A laminated material, wherein an electrically conductive layer is formed on the surface of at least one side of the gas barrier film according to claim 1.

14. An image display medium, wherein an image display layer is formed on said electrically conductive layer using a laminated material according to claim 13 as a base material.